

WHAT IS CLAIMED IS:

- 1 1. A method, comprising:
2 receiving a packet;
3 determining a number of tokens in a token bucket; and
4 calculating a probability for marking the received packet with a precedence level
5 when the number of tokens in the token bucket are between a first threshold and a second
6 threshold.
- 1 2. The method of claim 1, further comprising marking the packet with a high
2 precedence level if the number of tokens exceeds a first threshold.
- 1 3. The method of claim 1, further comprising marking the packet with a low
2 precedence level if the number of tokens is less than a second threshold, wherein the
3 second threshold is lower than the first threshold.
- 1 4. The method of claim 1, further comprising marking the packet with a low
2 precedence value or a high precedence value based on the calculated probability when the
3 number of tokens in the token bucket are between the first and second thresholds.
- 1 5. The method of claim 4, wherein the probability of marking the received packet
2 with a low precedence is lowered when a previously received packet was marked with a
3 low precedence.

1 6. The method of claim 1, wherein the number of tokens in the token bucket are
2 inversely proportional to the amount of network traffic.

1 7. The method of claim 6, wherein the probability of marking the received packet
2 with a low precedence is inversely proportional to the number of tokens in the token
3 bucket.

1 8. A packet marking system, comprising:
2 a receiving engine capable of receiving a packet for marking;
3 a marker engine, communicatively coupled to the receiving engine, capable of
4 determining the number of tokens in a token bucket; and
5 a probability engine, communicatively coupled to the marker engine, capable of
6 calculating a probability for marking the received packet with a precedence level when
7 the number of tokens in the token bucket are between a first threshold and a second
8 threshold.

1 9. The system of claim 8, wherein the marker engine is further capable of marking
2 the packet with a high precedence level if the number of tokens exceeds a first threshold.

1 10. The system of claim 8, wherein the marker engine is further capable of marking
2 the packet with a low precedence level if the number of tokens is less than a second
3 threshold, wherein the second threshold is lower than the first threshold.

1 11. The system of claim 8, wherein the marker engine is further capable of marking
2 the packet with a low precedence value or a high precedence value based on the
3 calculated probability when the number of tokens in the token bucket are between the
4 first and second thresholds.

1 12. The system of claim 11, wherein the probability of marking the received packet
2 with a low precedence is lowered when a previously received packet was marked with a
3 low precedence.

1 13. The system of claim 8, wherein the number of tokens in the token bucket are
2 inversely proportional to the amount of network traffic.

1 14. The system of claim 13, wherein the probability of marking the received packet
2 with a low precedence is inversely proportional to the number of tokens in the token
3 bucket.

1 15. A computer-readable medium having stored thereon instructions for a processor
2 to execute a method, the method comprising:
3 receiving a packet;
4 determining a number of tokens in a token bucket; and
5 calculating a probability for marking the received packet with a precedence level
6 when the number of tokens in the token bucket are between a first threshold and a second
7 threshold.

1 16. A system comprising:
2 means for receiving a packet;
3 means for determining a number of tokens in a token bucket; and
4 means for calculating a probability for marking the received packet with a
5 precedence level when the number of tokens in the token bucket are between a first
6 threshold and a second threshold.

1 17. A method, comprising:
2 receiving a packet;
3 determining a number of tokens in a first token bucket;
4 determining a precedence value for marking the packet based on the determined
5 number of tokens; and
6 upgrading the determined precedence value to a higher precedence value when a
7 pre-specified number of previously received packets were marked with the same
8 determined precedence value.

1 18. The method of claim 17, wherein the previously received packets were marked
2 with the same determined precedence value in succession.

1 19. The method of claim 17, wherein the precedence value is inversely proportional
2 to the determined number of tokens.

1 20. The method of claim 17, further comprising determining a number of tokens in a
2 second token bucket and wherein the determining a precedence value is based on the
3 number of tokens in the second token bucket if the first token bucket has tokens less than
4 a size of the received packet.

1 21. The method of claim 17, further comprising marking the packet with the
2 determined precedence value or the upgraded precedence value.

1 22. A packet marking system, comprising:
2 a receiving engine capable of receiving a packet;
3 a marker engine, communicatively coupled to the receiving engine, capable of
4 determining a number of tokens in a first token bucket and capable of determining a
5 precedence value for marking the packet based on the determined number of tokens; and
6 an upgrade engine, communicatively coupled to the marker engine, capable of
7 upgrading the determined precedence value to a higher precedence value when a pre-
8 specified number of previously received packets were marked with the same determined
9 precedence value.

1 23. The system of claim 22, wherein the previously received packets were marked
2 with the same determined precedence value in succession.

1 24. The system of claim 22, wherein the precedence value is inversely proportional to
2 the determined number of tokens.

1 25. The system of claim 22, wherein the marker engine is further capable of
2 determining a number of tokens in a second token bucket and the marker determines a
3 precedence value based on the number of tokens in the second token bucket if the first
4 token bucket has tokens less than a size of the received packet.

1 26. The system of claim 22, wherein the marker engine is further capable of marking
2 the packet with the determined precedence value or the upgraded precedence value.

1 27. A computer-readable medium having stored thereon instructions to execute a
2 method, the method comprising:
3 receiving a packet;
4 determining a number of tokens in a first token bucket;
5 determining a precedence value for marking the packet based on the determined
6 number of tokens; and
7 upgrading the determined precedence value to a higher precedence value when a
8 pre-specified number of previously received packets were marked with the same
9 determined precedence value.

1 28. A system, comprising:
2 means for receiving a packet;
3 means for determining a number of tokens in a first token bucket;
4 means for determining a precedence value for marking the packet based on the

- 5 determined number of tokens; and
- 6 means for upgrading the determined precedence value to a higher precedence
- 7 value when a pre-specified number of previously received packets were marked with the
- 8 same determined precedence value.